

Compressed Air Purification Products



Air Preparation Equipment

Model Selection Guide

Class	Solid particle				Particle size μm	Concentration mg/m ³	Class	Moisture		Class	Oil	
	Max. number of particles/1 m ³							Pressure dew point (At air pressure of 101.5 psi)	Oil concentration mg/m ³			
	Particle size d μm											
	≤ 0.10	0.10 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0								
1	Not specified	100	1	0	NA	NA		°F	1	≤ 0.01		
2	Not specified	100000	1000	10			1	≤ -94	2	≤ 0.1		
3	Not specified	Not specified	10000	500			2	≤ -40	3	≤ 1		
4	Not specified	Not specified	Not specified	1000			3	≤ -4	4	≤ 5		
5	Not specified	Not specified	Not specified	20000			4	≤ +37				
6	NA				≤ 5	≤ 5	5	≤ +45				
7	NA				≤ 40	≤ 10	6	≤ +50				

Indication: The degree of quality is indicated with 1, 4 and 2 for systems with solid particle "class 1," moisture "class 4" and oil "class 2."

System no.	Application	Impurity in compressed air					
		Moisture		Filtration	Oil mist concentration (1)	Cleanliness	Oil odor Quality grade as system (2)
		Dew point	Moisture contents				

A	Water drop removed air	Atmospheric pressure dew point 42°F (101.5psi Pressure dew point 104°F)	7 g/m ³ (ANR) (101.5psi, at 77°F)	3 μm (Filtering efficiency 99%)	—	—	3, -, -
	• Air blowing (Simple removal of particles) • General pneumatic tools						
B	Dry air						3, 4, - 3, 5, - 3, 6, -
	• Used for the same applications as A, when temperature drop in the middle of piping is large.						
C	Dry air	Atmospheric pressure dew point	1.7 g/m ³ (ANR) to 0.8 g/m ³ (ANR)	0.3 μm (Filtering efficiency 99.9%)	Max. 1 mg/m ³ (ANR) 0.8 ppm	Yes	2, 4, 3 2, 5, 3 2, 6, 3
	• General pneumatic equipment • General painting						
D	Dry clean air	6.8°F to -9.4°F	101.5psi Pressure dew point 59 to 37.4°F		Max. 0.1 mg/m ³ (ANR) 0.08 ppm		1, 4, 2 1, 5, 2 1, 6, 2
	• High grade painting • Sequence control • Measurement device • Instrumentation • Drying and cleaning (Precision parts) • Machine tools (Pneumatic bearing)						
E	Dry clean air			0.01 μm (Filtering efficiency 99.9%)	Max. 0.01 mg/m ³ (ANR) 0.008 ppm		1, 4, 1 1, 5, 1 1, 6, 1
	• Without refrigerated air dryer on the sub line • Built-in with equipment (With machine tools, 3-D measurement device, etc.)						
F	Deodorant air				Max. 0.004 mg/m ³ (ANR) 0.0032 ppm	No	
	• Stirring, transporting, drying and packaging • Food industry (Except direct blowing to foods)						
G	Low dew point clean air	Atmospheric pressure dew point -22 to -76°F	0.5 g/m ³ (ANR) to 0.02 g/m ³ (ANR)		Max. 0.01 mg/m ³ (ANR) 0.008 ppm	Yes	(3) 1, 1, 1 1, 2, 1 1, 3, 1
	• Drying electric and electronic parts • Drying a filling tank • Transporting powders • Ozone generator • Low temperature actuated equipment						
H	Low dew point clean air (For clean room)	101.5psi Pressure dew point 21.2 to -43.6°F		0.01 μm (Filtering efficiency 99.99%)	Max. 0.004 mg/m ³ (ANR) 0.0032 ppm	No	
	• Blowing semi-conductor parts in the clean room						

Note 1) When the inlet oil mist concentration (compressor discharge concentration) is approx. 30 mg/m³ (ANR) or less.

Note 2) This describes the grade of compressed air quality based on ISO8573-1: 2001 (JIS B8392-1: 2003), which is the maximum quality grade for the system. It varies, however, depending on the inlet air conditions.

Note 3) Please contact SMC since this can be manufactured as a special order (depending on the operating conditions).

Main Line

Sub Line

Description	Air Tank	Air Cooled Aftercooler Water Cooled Aftercooler	Main Line Filter	Refrigerated Air Dryer	
Model	AT	HAA, HAW	AFF/AFW	IDFB/PACT	IDU
Flow capacity (scfm (ANR))	Capacity 26 to 793 gal	35 to 201 10 to 635	10 to 16,100	10 to 4,000	11 to 120
Max. inlet air temperature	212°F	158°F 158°F, 356°F (Varies by model)	140°F	122°F	180°F
Filtration (Filtering efficiency)			3 μm (99%)		
Outlet oil mist concentration (Max.) (1)					
Outlet cleanliness					
Pressure dew point				37.4°F 100°F Inlet, 100°F Ambient 100 psi Inlet Pressure	37.4°F 180°F Inlet, 100°F Ambient 100 psi Inlet Pressure

Reciprocating air compressor	Pulsation attenuation, Accumulation, Cooling	Cooling	Separation, Filtration		
	Air Tank	Select either air cooled aftercooler or water cooled aftercooler	Main Line Filter		
Screw air compressor	Class 2 pressure vessel				
	Not required when connected to an air compressor.				
	AT	HAA or HAW	AFF	Dehumidification	
	Applicable air compressor: 5.5 kW (7 hp) to 220 kW (300 hp)	Applicable air compressor: 7.5 kW (10 hp) to 37 kW (50 hp)	Applicable air compressor: 2.2 kW (3 hp) to 240 kW (320 hp)	Refrigerated Air Dryer	
		HAW		IDF	
		Applicable air compressor: 2.2 kW (3 hp) to 110 kW (150 hp)			
		HAA or HAW	AFF	Dehumidification	
	Air tank is not required for screw compressors since pulsation is small, but required when it is used to accumulate pressure.	Not required when connected to an air compressor.		Refrigerated Air Dryer (High inlet air temperature type)	
				Outlet air pressure dew point 37.4°F (100psi, at 100°F)	
				Applicable air compressor: 0.75 kW (1 hp) to 370 kW (500 hp)	
					Outlet air pressure dew point 37.4°F (100psi, at 180°F)
					Applicable air compressor: 2.2 kW (3 hp) to 75 kW (100 hp)
					IDU

Local line

Water Separator	Mist Separator	Heatless Air Dryer	Micro Mist Separator with Pre-filter	Micro Mist Separator	Membrane Air Dryer	Super Mist Separator	Odor Removal Filter	Clean Air Filter	Clean Gas Filter
AMG	AM	ID	AMH	AMD	IDG	AME	AMF	SFD	SFA, SFB, SFC
10 to 424		2.82 to 27.54	7 to 424	7 to 424	0.35 to 35.31 2.65 to 10.6 1.77 to 5.29	7 to 424	7 to 424	3.5 to 18	0.9 to 10
140°F		122°F	140°F		122°F, 131°F (Varies by model)	122°F	140°F	113°F	176°F, 248°F (Varies by models)
Water droplet removal ratio 99%	0.3 μm (99.9%)		0.01 μm (With 0.3 μm pre-filter)	0.01 μm (99.9%)		0.01 μm (99.9%)	0.01 μm (99.99%)	0.01 μm (99.99%)	0.01 μm (99.99%)
	1 mg/m ³ (ANR) [≅ 0.8 ppm]		0.1 mg/m ³ (ANR) [≅ 0.08 ppm]			0.01 mg/m ³ (ANR) [≅ 0.008 ppm]	0.004 mg/m ³ (ANR) [≅ 0.0032 ppm]		
						Particles with 0.3 μm or more: 100 or less/ft ³ (35 or less/10 L (ANR))			Particles with 0.1 μm or more: 0/6 L
		16.2°F -26.2°F 95°F Inlet, 95°F Ambient 105.1 psi Inlet Pressure			43°F 55°F 77°F Inlet, 77°F Ambient 105.1 psi Inlet Pressure	-4°F -44°F 77°F Inlet, 77°F Ambient 105.1 psi Inlet Pressure			

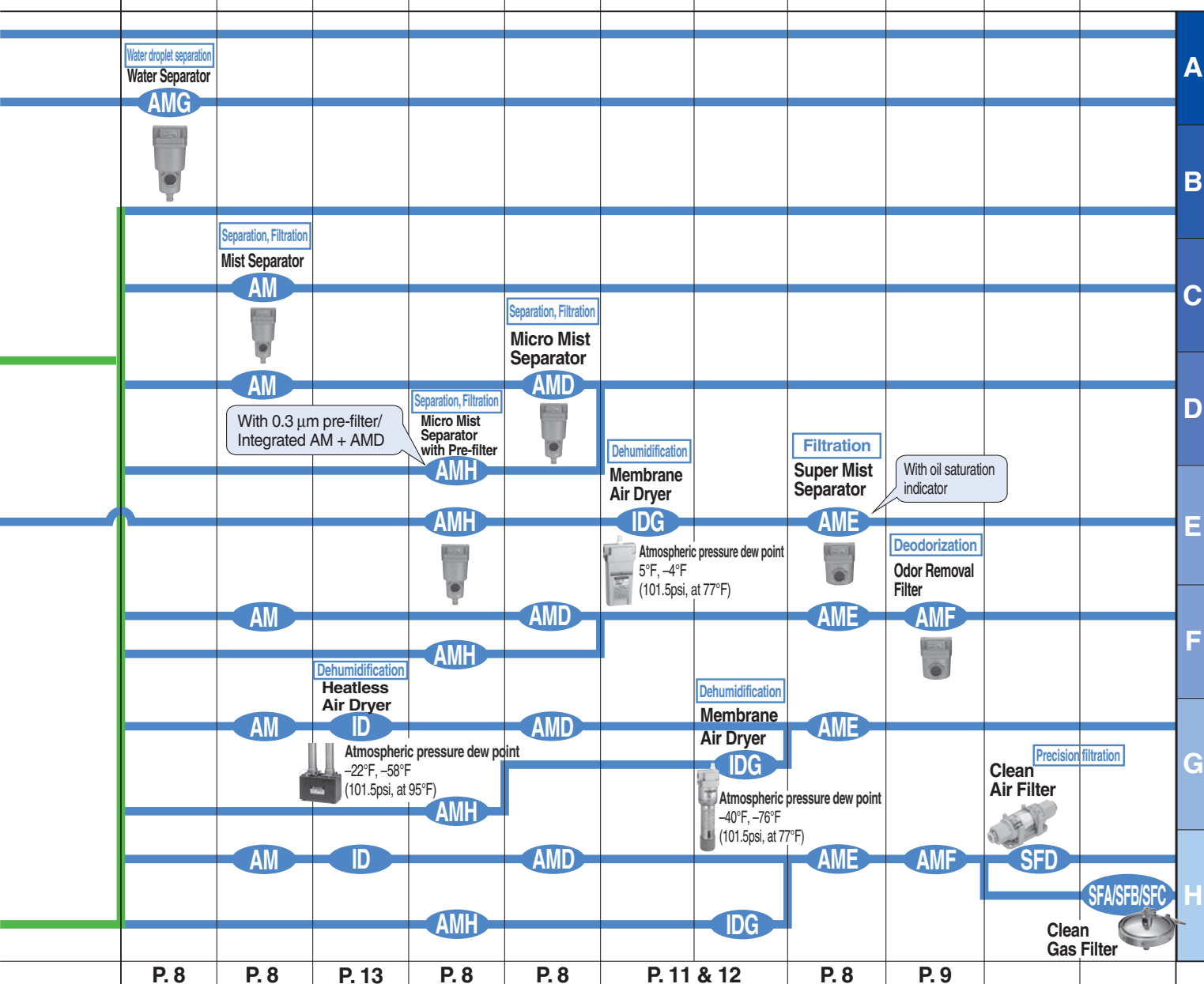


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Refrigerated Dryers

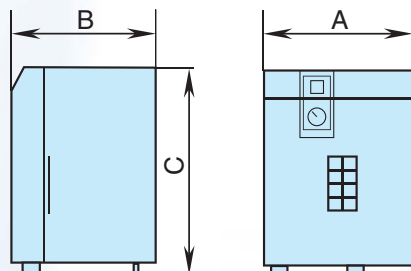
Series IDFB□E Dryer features

- Environmental friendly R134a/R407C refrigerant
- Simple control system, incorporating easy to read evaporator gauge
- Stainless steel heat exchanger providing long life and low pressure drops
- Compact design with staggered inlet/outlet ports for ease of installation
- 3/8" push-in condensate drain port



IDFB□E Dryer Technical Specifications

Model	Flow scfm at pressure dewpoints			Power supply AC 60Hz	Power consumption	Port connections NPT	Refrigerant	Weight lbs	Dimensions inches		
	37°F	45°F	50°F		(KW)				A	B	C
IDFB3E-11N	10	11	12	Single Phase 115V	0.44	3/8"	R134a	40	8.9	16.1	18.6
IDFB4E-11N	15	16	17		0.26	1/2"		55	10.6	17.7	19.5
IDFB6E-11N	25	26	28		0.26	3/4"		57		18.9	22.2
IDFB8E-11N	41	43	45		0.31			64			
IDFB11E-11N	59	62	65		0.55			73			
IDFB15E-11N	71	80	86		0.75	1"		110	11.8	23.7	22.8
IDFB22E-11N	107	120	130		1			119	11.4	30.5	24.5
IDFB22E-23N				137			33.7				
IDFB37E-23N	161	173	181	Single Phase 230V	1.27	1-1/2"	137				
IDFB55E-30N-X224	226	258	297	Three Phase 220V	1.7	2"	R407c	220	18.5	33.7	31.5
IDFB55E-46N	226	258	297	Three Phase 460V	2.4			258			35.4
IDFB75E-30N-X224	300	353	406	Three Phase 220V	25			255			31.5
IDFB75E-46N	300	353	406	Three Phase 460V	2.4			271			35.4



1. Flow capacities are based on CAGI (Compressed Air and Gas Institute) standard ADF100: Refrigerated Compressed Air dryers - Method for testing and rating. The reference conditions are - Inlet air temperature: 100°F, Ambient temperature: 100°F, Inlet pressure: 100 psi.

2. Dryer models IDFB55E-30-X224 and IDFB75E-30-X224 are not UL certified.

If your operating conditions are other than standard reference conditions stated above, please make use of the following capacity correction factors to size a suitable dryer for your application.

Correction factor for inlet temperature changes

Temperature °F	Correction factor (A)
90	1.31
100	1.00
110	0.82
120	0.66

Correction factor for ambient air temperature changes

Temperature °F	Correction factor (B)
77	1.24
90	1.09
95	1.04
100	1.00
105	0.98
110	0.95

Correction factor for inlet pressure changes

Pressure PSIG	Correction factor (C)
75	0.95
100	1.00
110	1.04
120	1.07
125	1.09
150	1.13
175	1.18
200	1.22
250	1.24

Example of selecting a suitable dryer

- Operating air flow rate: 50 scfm
- Ambient temperature: 105°F
- Inlet air temperature: 110°F
- Inlet air pressure: 120psig
- Corrected air flow rate = Operating air flow rate (Factor A x Factor B x Factor C.)
 $50 / (0.82 \times 0.98 \times 1.07) = 58.82$

Select a model with nominal air flow rate higher than the corrected air flow rate calculated in the formula above.

The dryer model: IDFB11E-11N Providing 59scfm at 37°F pressure dew point

Please call 714-669-0266 for 24/7 Dryer Technical/Warranty Support.
Please contact SMC for more detailed information.

High Inlet Temperature Refrigerated Dryers

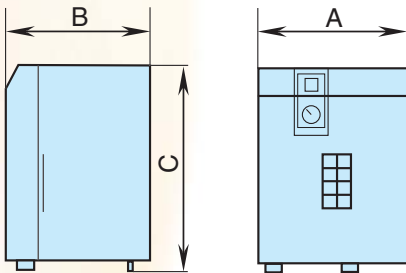
Series IDU□E Dryer features

- Environmental friendly R134a/R407C refrigerant
- Simple control system, incorporating easy to read evaporator gauge
- Stainless steel heat exchanger providing long life and low pressure drops
- Compact design with staggered inlet/outlet ports for ease of installation
- Built-In After-Cooler (except IDU6E)



IDU□E Dryer Technical Specifications

Model	Flow scfm at pressure dew points			Power supply AC 60Hz	Power consumption (KW)	Port size	NPT piping adapter	Refrigerant	Weight lbs	Dimensions inches		
	37°F	45°F	50°F							A	B	C
IDU6E-10-K	11	16	20	Single Phase 120VAC	0.44	3/4"	IDF-AP603	R134A	62	10.6	19.1	22.4
IDU8E-10-K	16	24	29		0.29			R134A	97	10.6	19.1	33.8
IDU11E-10-K	23	34	41		0.47			R134A	104	10.6	19.1	35.8
IDU15E-10-K	37	56	68		0.685	1"	IDF-AP605	R134A	157	11.8	24.4	37.8
IDU22E-30-L	57	86	104	Three Phase 220VAC	1.45	1-1/2"	IDF-AP604	R407C	199	12.8	30.5	45.4
IDU37E-30-L	81	122	147		1.45		IDF-AP606	R407C	287	14.2	34.9	49.5
IDU55E-30-L	94	146	178		2	2"	IDF-AP607	R407C	353	18.5	34.9	53
IDU75E-30-L	120	186	227		2.85			R407C	366	18.5	34.9	58.3



1. Flow capacities are based on Inlet air temperature: 180°F, Ambient temperature: 100°F, Inlet pressure: 100 psi.
2. All dryer models rated for 232psi.
3. Please be sure to order corresponding NPT piping adapter.

If your operating conditions are other than standard reference conditions stated above, please make use of the following capacity correction factors to size a suitable dryer for your application.

Correction factor for inlet air temperature changes (IDU6-37E)

Inlet air temperature °F	Correction factor (A)
41 to 113	1.47
122	1.37
131	1.28
140	1.21
149	1.15
158	1.1
167	1.05
176	1.01
180	1

(IDU55, 75E)

Inlet air temperature °F	Correction factor (A)
41 to 113	1.75
122	1.59
131	1.44
140	1.26
149	1.1
158	1.07
167	1.04
176	1.01
180	1

Correction factor for air inlet pressure changes (IDU6-37E)

Inlet air pressure psi	Correction factor (C)
29.01	0.623
43.51	0.723
58.02	0.814
72.52	0.884
87.02	0.954
100	1
101.53	1.005
116.03	1.065
130.53	1.115
145.04 to 232.06	1.165

(IDU55, 75E)

Inlet air pressure psi	Correction factor (C)
29.01	0.625
43.51	0.695
58.02	0.776
72.52	0.856
87.02	0.937
100	1
101.53	1.008
116.03	1.088
130.53	1.169
145.04 to 232.06	1.239

Correction factor for ambient temperature changes (IDU6-37E)

Ambient temperature °F	Correction factor (B)
35.6 to 77	1.36
86	1.18
89.6	1.13
95	1.05
100	1
104	0.95

(IDU55, 75E)

Ambient temperature °F	Correction factor (B)
35.6 to 77	1.66
86	1.48
89.6	1.33
95	1.2
100	1
104	0.84

Example of selecting a suitable dryer

- Operating air flow rate: 50 scfm
- Required dew point: 45°F
- Inlet air temperature: 167°F
- Ambient temperature: 104°F
- Inlet air pressure: 150psig
- Corrected air flow rate = Operating air flow rate (Factor A x Factor B x Factor C.) $50 / (1.05 \times 0.95 \times 1.165) = 43.10$

Select a model with nominal air flow rate higher than the corrected air flow rate calculated in the formula above.

The dryer model: IDU15E-10-K Providing 56scfm 45°F pressure dew point

Please call 714-669-0266 for 24/7 Dryer Technical/Warranty Support.
Please contact SMC for more detailed information.

High Capacity Refrigerated Dryers

Series PACT

Specifications and Dimensions

*Capacity is rated according to CAGI Std No. ADF100 "Refrigerated Compressed Air Dryers-Method for testing and rating, "Pressure dew point@100 psig inlet air pressure, 100°F inlet air temperature, 100°F ambient air temperature with a 5 psig maximum pressure drop. Maximum working pressure 200 psi. Maximum inlet air temperature 115°F. Maximum ambient temperature 115°F. Consult SMC for higher temperature applications.



Please note: Inlet air connection is located on top of unit for models PACT350-PACT1250. Dimensions are rounded to the nearest inch.

Model	Flow (scfm)	Voltage	Connection	Pressure Drop (psi)	Weight (Lbs.)	Dimensions L x W x H (in)	Refrigerant
PACT350-2	350	230/1/60	2" NPT-F	2.1	250	25 x 22 x 39	R404A
PACT350-4	350	460/3/60	2" NPT-F	2.1	270	25 x 22 x 39	R404A
PACT400-2	400	230/1/60	2-1/2" NPT-F	1.5	265	29 x 26 x 44	R404A
PACT400-4	400	460/3/60	2-1/2" NPT-F	1.5	285	29 x 26 x 44	R404A
PACT500-4	500	460/3/60	2-1/2" NPT-F	2.6	300	29 x 26 x 44	R404A
PACT600-4	600	460/3/60	3" Flange	2.2	405	37 x 31 x 56	R404A
PACT800-4	800	460/3/60	3" Flange	3.4	420	37 x 31 x 56	R404A
PACT1000-4	1000	460/3/60	3" Flange	2.7	600	37 x 31 x 56	R404A
PACT1250-4	1250	460/3/60	3" Flange	2.8	620	37 x 31 x 56	R404A
PACT1500-4	1500	460/3/60	4" Flange	3.2	1200	61 x 58 x 73	R404A
PACT1750-4	1750	460/3/60	4" Flange	2.2	1300	61 x 58 x 73	R404A
PACT2000-4	2000	460/3/60	4" Flange	2.7	1350	61 x 58 x 73	R404A
PACT2500-4	2500	460/3/60	6" Flange	2.8	1450	61 x 58 x 73	R404A
PACT3000-4	3000	460/3/60	6" Flange	2.6	1750	75 x 56 x 73	R404A
PACT4000-4	4000	460/3/60	6" Flange	2.5	2557	82 x 56 x 73	R404A

"Water-cooled available on the PACT350 and larger— Contact SMC."

Correction Factor Table

Operating Pressure (F1)

PSIG	60	75	100	115	125	150	175	200
Factor	0.77	0.85	1.00	1.06	1.10	1.16	1.21	1.25

Ambient Temperature (F2)

°F	80°	90°	100°	105°	110°	115°
Factor	1.08	1.06	1.00	0.96	0.90	0.80

Inlet Air Temperature (F2)

°F	85°	95°	100°	110°	120°	130°
Factor	1.20	1.08	1.00	0.75	0.60	0.50

Mini. standard air flow rate = Design air flow/(F1)/(F2)/(F3)

Example

400SCFM Compressor

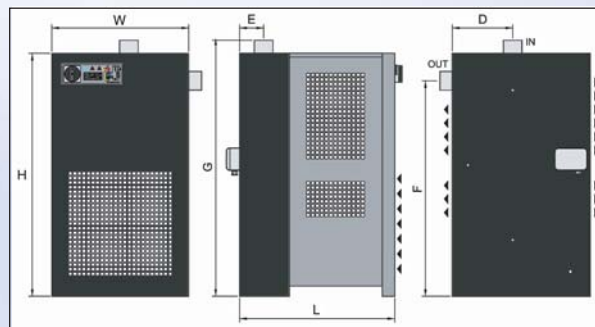
100 Inlet PSI

105 Ambient Temp.

110 Inlet Temp

$400/1.06/0.94/0.85 = 472.3$ SCFM

Therefore the model suitable for the application is the PACT500-4 (500SCFM).



PACT Air Dryer is distributed by SMC Corporation of America.

Please contact SMC for more detailed information.

High Capacity Refrigerated a Dryer Series PACT

Compressed Air Filters

Series AM□/AFF

Water droplet removal

Water Separator

Water droplet separation rate: 99%



AMG150C to 550C

AMG650/850

Large dust particle filtration, Oil droplet separation

Main Line Filter

Nominal filtration rating: 3 µm
[Filtration efficiency: 99%]



AFF2C to 22C

AFF37B/75B

Dust filtration, Oil mist separation

Mist Separator

Nominal filtration rating: 0.3 µm
[Filtration efficiency: 99.9%]
Oil mist density at outlet:
Max. 1.0 mg/m³ (ANR)
[≈0.8 ppm]



AM150C to 550C AM650/850

Dust filtration, Oil mist adsorption

Super Mist Separator

Color change indicates when element is saturated.
Nominal filtration rating: 0.01 µm
[Filtration efficiency: 99.9%]
Oil mist density at outlet:
Max. 0.01 mg/m³ (ANR)
[≈0.008 ppm]
Cleanliness at outlet:
Not more than 35 particles of size 0.3 µm or larger/10 ℓ (100 particles or less/ft³)



AME150C to 550C AME650/850

Dust filtration, Oil mist separation

Micro Mist Separator

Nominal filtration rating: 0.01 µm
[Filtration efficiency: 99.9%]
Oil mist density at outlet:
Max. 0.1 mg/m³ (ANR)
[≈0.08 ppm]



AMD150C to 550C

AMD650/850

Dust filtration, Oil mist separation

Micro Mist Separator with Pre-filter

Built-in 0.3 µm pre-filter
The AM + AMD element have been integrated to achieve a space-saving design.
Nominal filtration rating: 0.01 µm
[Filtration efficiency: 99.9%]
Oil mist density at outlet:
Max. 0.1 mg/m³ (ANR)
[≈0.08 ppm]



AMH150C to 550C AMH650/850

Deodorization

Odor Removal Filter

Nominal filtration rating: 0.01 µm
[Filtration efficiency: 99.9%]
Oil mist density at outlet:
Max. 0.004 mg/m³ (ANR)
[≈0.0032 ppm]



AMF150C to 550C

AMF650/850

AMG Series Water Separator	AMG Element	AFF Series 3 Micron Rating	AFF Element	AM Series 0.3 Micron Rating	AM Element	Flow Rate (SCFM)	Port Size	Max. Working Pressure	Max. Temperature
AMG150C-N02C	AMG-EL150	AFF2C-N02C-T	AFF-EL2B	AM150C-N02C-T	AM-EL150	10	1/4"	145 psi	140° F
AMG250C-N03C	AMG-EL250	AFF4C-N03C-T	AFF-EL4B	AM250C-N03C-T	AM-EL250	26	3/8"	145 psi	140° F
AMG350C-N04C	AMG-EL350	AFF8C-N04C-T	AFF-EL8B	AM350C-N04C-T	AM-EL350	53	1/2"	145 psi	140° F
AMG450C-N06D	AMG-EL450	AFF11C-N06D-T	AFF-EL11B	AM450C-N06D-T	AM-EL450	78	3/4"	145 psi	140° F
AMG550C-N10D	AMG-EL550	AFF22C-N10D-T	AFF-EL22B	AM550C-N10D-T	AM-EL550	123	1"	145 psi	140° F
AMG650-N14D	AMG-EL650	AFF37B-N14D-T	AFF-EL37B	AM650-N14D-T	AM-EL650	212	1-1/2"	145 psi	140° F
AMG850-N20D	AMG-EL850	AFF75B-N20D-T	AFF-EL75B	AM850-N20D-T	AM-EL850	424	2"	145 psi	140° F

AMD Series 0.01 Micron Rating	AMD Element	AMH Series 0.01 Micron Rating	AMH Element	AME Series 0.01 Micron Rating	AME Element	Flow Rate (SCFM)	Port Size	Max. Working Pressure	Max. Temperature
AMD150C-N02D-T	AMD-EL150	AMH150C-N02D-T	AMH-EL150	AME150C-N02	AME-EL150	7	1/4"	145 psi	140° F
AMD250C-N03D-T	AMD-EL250	AMH250C-N03D-T	AMH-EL250	AME250C-N03	AME-EL250	17	3/8"	145 psi	140° F
AMD350C-N04D-T	AMD-EL350	AMH350C-N04D-T	AMH-EL350	AME350C-N04	AME-EL350	35	1/2"	145 psi	140° F
AMD450C-N06D-T	AMD-EL450	AMH450C-N06D-T	AMH-EL450	AME450C-N06	AME-EL450	71	3/4"	145 psi	140° F
AMD550C-N10D-T	AMD-EL550	AMH550C-N10D-T	AMH-EL550	AME550C-N10	AME-EL550	131	1"	145 psi	140° F
AMD650-N14D-T	AMD-EL650	AMH650-N14D-T	AMH-EL650	AME650-N14	AME-EL650	212	1-1/2"	145 psi	140° F
AMD850-N20D-T	AMD-EL850	AMH850-N20D-T	AMH-EL850	AME850-N20	AME-EL850	424	2"	145 psi	140° F

Filters with - T suffix comes with pop up indicator for element replacement.
For performance correction factors and filter dimensions, see page 9.

Please contact SMC for more detailed information.

Compressed Air Filters

Series AM□/AFF

Activated carbon filter

AMF activated carbon filters are high efficiency units which remove hydrocarbon and organic vapors from compressed air.

Activated carbon filters must not operate in oil or water saturated conditions. Activated carbon filters typically operate downstream of a 0.01 micron coalescing filter.

*Warning:

Activated carbon filters will not remove carbon monoxide or carbon dioxide from compressed air. For removal of these gases contact your nearest SMC office. Replace filter element every 6 months

Model	Flow *	Max. working pressure	Max. temp	Port size (NPT)	Element
	SCFM				
AMF150C-N02	7	145 psi	140°F	1/4"	AMF-EL150
AMF250C-N03	17			3/8"	AMF-EL250
AMF350C-N04	35			1/2"	AMF-EL350
AMF450C-N06	71			3/4"	AMF-EL450
AMF550C-N10	131			1"	AMF-EL550
AMF650-N14	212			1-1/2"	AMF-EL650
AMF850-N20	424			2"	AMF-EL850

* Flow (ANR) @ 100 psi

For performance correction factors and filter dimensions, see table below.

Filter performance (ISO 8573-1) Particle size Class.1
Oil content Class.2

Caution: Be sure to install series AMD micro mist separator, series AMH micro mist separator with pre-filter, or series AME super mist separator upstream to ensure optimal performance.

Correction Factors/Dimensions

Performance Correction Factors

To calculate the capacity of a filter at various pressures multiply its nominal flow by the correction factor.

Operating pressure	psi	14.5	29	44	58	72	87	101	116	130	145	174
Correction factor		.25	.38	.50	.63	.75	.88	1	1.12	1.25	1.4	1.6

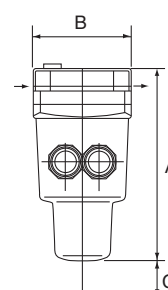
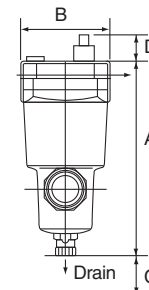
Example: AMD550C at 100psi Flow = 131 scfm

at 58 psi multiply 131 x .63 = 82.5 scfm (corrected capacity)

Accessories

Filter Model	2C 150C	4C 250C	8C 350C	11C 450C	22C 550C	37B 650	75B 850
Bracket assembly	AM-BM101	AM-BM102	AM-BM103	AM-BM104	AM-BM105	BM56	BM57

Dimensions



AFF2C to 75B, AMG150C to 850
AM150C to 850, AMD150C to 850
AMH150C to 850

AME150C to 850
AMF150C to 850

Aluminum Body - Threaded Ports AFF, AMG, AM, AMD, AMH

Filter models		Dimensions				Weight Lb	Port size (NPT)	Bowl Capacity (Liters)
		A Inch	B Inch	C Inch	D Inch			
2C	150C	6.3	2.5	0.4	1.5	0.84 (0.38)	1/4"	0.25
4C	250C	6.81	3.0			1.21 (0.55)	3/8"	0.30
8C	350C	8.0	3.5			1.98 (0.9)	1/2"	0.60
11C	450C	8.9	4.2			3.10 (1.4)	3/4"	1
22C	550C	10.2	4.8			4.6 (2.1)	1"	1.5
37B	650	12.2	6.3			9.2 (4.2)	1-1/2"	3
75B	850	18.2	8.7			23.1 (10.5)	2"	9

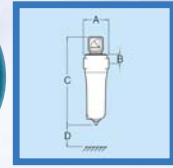
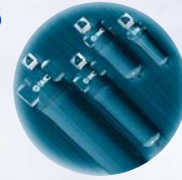
Aluminum Body - Threaded Ports AME, AMF

Filter models	Dimensions			Weight Lb	Port size (NPT)
	A Inch	B Inch	C Inch		
150C	3.3	2.5	0.4	0.66	1/4"
250C	4.1	3	0.4	1.06	3/8"
350C	5.2	3.6	0.4	1.76	1/2"
450C	6	4.2	0.4	2.87	3/4"
550C	7.4	4.8	0.6	4.41	1"
650	11.5	6.3	0.4	9.26	1-1/2"
850	15.9	8.7	0.4	23.15	2"

Please contact SMC for more detailed information.

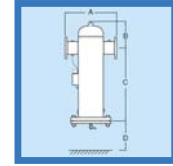
Large Capacity Air Filters

Compressed Air Threaded Filters Series AFW



Specification

1 Micron Filter	1 Micron Element	0.01 Micron Filter	0.01 Micron Element	Flow Rate (SCFM)	Port Size	Max. Working Pressure	Max. Temperature	Dimensions Inch				Weight Lbs.
								A	B	C	D	
AFW475-N20-E1	EL-AFW475-E1	AFW475-N20-EA	EL-AFW475-EA	475	2"	232 psi	248° F	5 1/2"	2"	22"	6"	9.7
AFW675-N20-E1	EL-AFW675-E1	AFW675-N20-EA	EL-AFW675-EA	675	2"	232 psi	248° F	5 3/4"	2"	30"	6"	11
AFW950-N25-E1	EL-AFW950-E1	AFW950-N25-EA	EL-AFW950-EA	954	2 1/2"	232 psi	248° F	8"	2 3/4"	32"	8"	25.4
AFW950-N30-E1	EL-AFW950-E1	AFW950-N30-EA	EL-AFW950-EA	954	3"	232 psi	248° F	8"	2 3/4"	32"	8"	25.4
AFW1300-N30-E1	EL-AFW1300-E1	AFW1300-N30-EA	EL-AFW1300-EA	1301	3"	232 psi	248° F	8"	2 3/4"	37"	8"	34.2
AFW1530-N30-E1	EL-AFW1530-E1	AFW1530-N30-EA	EL-AFW1530-EA	1531	3"	232 psi	248° F	8"	2 3/4"	42"	12"	41.9



Compressed Air Flanged Filters Series AFW

Specification

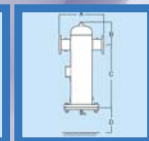
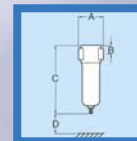
1 Micron Filter	1 Micron Element	0.01 Micron Filter	0.01 Micron Element	No. of Elements	Flow Rate (SCFM)	Flange Size	Max Working Pressure	Max. Temperature	Dimensions inch				Weight Lbs.
									A	B	C	D	
AFW1400-N30F-E1	EL-AFW700-E1	AFW1400-N30F-EA	EL-AFW700-EA	2	1400	3"	232 psi	248° F	16"	17-1/2"	39"	32"	215
AFW2100-N40F-E1	EL-AFW700-E1	AFW2100-N40F-EA	EL-AFW700-EA	3	2100	4"	232 psi	248° F	18-1/4"	9-3/4"	39-1/2"	32"	326
AFW2800-N60F-E1	EL-AFW700-E1	AFW2800-N60F-EA	EL-AFW700-EA	4	2800	6"	232 psi	248° F	20-1/2"	12"	41"	32"	439
AFW3500-N60F-E1	EL-AFW700-E1	AFW3500-N60F-EA	EL-AFW700-EA	5	3500	6"	232 psi	248° F	20-1/2"	12"	41"	32"	439
AFW4200-N60F-E1	EL-AFW700-E1	AFW4200-N60F-EA	EL-AFW700-EA	6	4200	6"	232 psi	248° F	22"	12-3/4"	40-1/2"	32"	536
AFW5600-N80F-E1	EL-AFW700-E1	AFW5600-N80F-EA	EL-AFW700-EA	8	5600	8"	232 psi	248° F	24"	14-1/2"	41-1/2"	32"	647
AFW7000-N80F-E1	EL-AFW700-E1	AFW7000-N80F-EA	EL-AFW700-EA	10	7000	8"	232 psi	248° F	28"	15-1/2"	41-1/2"	32"	778
AFW8400-N100F-E1	EL-AFW700-E1	AFW8400-N100F-EA	EL-AFW700-EA	12	8400	10"	232 psi	248° F	28"	17-1/2"	42-1/2"	32"	778
AFW9800-N100F-E1	EL-AFW700-E1	AFW9800-N100F-EA	EL-AFW700-EA	14	9800	10"	232 psi	248° F	28"	17-1/2"	42-1/2"	32"	936
AFW11200-N100F-E1	EL-AFW700-E1	AFW11200-N100F-EA	EL-AFW700-EA	16	11200	10"	232 psi	248° F	33"	19"	42-3/4"	32"	1214
AFW12600-N100F-E1	EL-AFW700-E1	AFW12600-N100F-EA	EL-AFW700-EA	18	12600	10"	232 psi	248° F	33"	19"	42-3/4"	32"	1214
AFW16100-N120F-E1	EL-AFW700-E1	AFW16100-N120F-EA	EL-AFW700-EA	23	16100	12"	232 psi	248° F	On Application				

Please see table below for all AFW filtration grades. To change filtration grade in part number just change the suffix on the part number.
Example AFW475-N20-E1 is now AFW475-N20-E5 for 5 Micron Rating.

Filtration grade	E25	E5	E1	EA	EC
Max. particle size class *	4	3	2	1	1
Max. oil content class*	N/A	4	2	1	1
Particle removal	25 micron	5 micron	1 micron	0.01 micron	0.01 micron
Max. oil carryover 20°C (68°F)	10ppm	5ppm	0.1ppm	0.01ppm	0.003ppm
Max. temperature	248°F	248°F	248°F	248°F	77°F
Pressure loss-clean & dry	0.4psi	0.6psi	1.1psi	1.5psi	1.1psi
Pressure loss-oil saturated	0.7psi	1.1psi	2.2psi	4.4psi	See note
Pressure loss-change element	6psi	6psi	6psi	6psi	See notes
Max. working pressure	232psi	232psi	232psi	232psi	232psi

Centrifugal Water Separators Series AFW-WS

Max. recommended operating temperature	248°F
Min. recommended operating temperature	35°F
Typical pressure loss at rated flow	0.7psi
Max. working pressure	232psig



Specification

Filter model	Port/Flange size	Flow SCFM	Dimensions inch				Weight lb
			A	B	C	D	
AFW675-N20-WS	2	675	5-1/2	2	19	6	9.70
AFW1000-N25-WS	2-1/2	1000	8	2-3/4	24	8	25.5
AFW1500-N30WS	3	1500	8	2-3/4	24	8	25.5
AFW1825-N40F-WS	DN100 4Flg	1824	20-1/2	12	38	28	163
AFW3825-N60-WS	DN150 6Flg	3824	26-3/4	15-3/4	40	28	364
AFW6470-N80F-WS	DN200 8Flg	6470	30-3/4	17-1/4	42	28	573
AFW1000-N100F-WS	DN250 10Flg	10000	35-1/2	21	44	28	992
AFW15000-N125F-WS	DN300 12Flg	15000	35-1/2	23-1/2	44	28	1215

Please contact SMC for more detailed information.

Membrane Air Dryers

Series IDG

M type



Comes with pre-filter mist separator AFM, and micro mist separator AFD. IDG60M, IDG100M are fitted with AMH micro mist separator with pre-filter.

V type



Comes with pre-filter as detailed left + regulator AR.

For details of "How to Order" contact SMC or refer to catalog No. CAT ES30-7D

Specifications

Single Type -4°F Atmospheric dew point

Model	Flow			Port NPT	Weight	Bracket
	Inlet	Outlet	Purge			
	SCFM	SCFM	SCFM		lbs	
IDG1-N02-P	0.44	0.35	0.09	1/4"	0.24	—
IDG3-N02-PS	1.09	0.88	0.21	1/4"	0.55	BM59
IDG5-N02-PS	2.19	1.77	0.42	1/4"	0.55	
IDG10-N03-P	4.41	3.53	0.88	3/8"	0.95	BM61
IDG20-N03-P	8.83	7.06	1.77	3/8"	1.46	BM63
IDG30-N03-P	13.24	10.59	2.65	3/8"	1.63	BM64
IDG50-N03-P	22.07	17.66	4.41	3/8"	1.7	
IDG60-N04-P	25.6	21.19	4.41	1/2"	3.31	BM65
IDG75-N04-P	31.78	26.49	5.29	1/2"	3.31	
IDG100-N04-P	42.02	35.31	6.71	1/2"	3.42	

Single Type -40°F Atmospheric dew point

Model	Flow			Port NPT	Weight	Bracket
	Inlet	Outlet	Purge		lbs	
	SCFM	SCFM	SCFM			
IDG30L-N03-P	3.53	2.65	0.88	3/8"	1.63	BM64
IDG50L-N03-P	5.29	3.88	1.41	3/8"	1.7	
IDG60L-N04-P	8.02	6	2.02	1/2"	3.31	BM65
IDG75L-N04-P	11.3	8.48	2.82	1/2"	3.64	
IDG100L-N04-P	14.12	10.59	3.53	1/2"	3.97	

Single Type -76°F Atmospheric dew point

Model	Flow			Port NPT	Weight	Bracket
	Inlet	Outlet	Purge			
	SCFM	SCFM	SCFM		lbs	
IDG60S-N04-P	2.72	1.77	0.95	1/2"	3.31	BM65
IDG75S-N04-P	5.44	3.53	1.91	1/2"	3.64	
IDG100S-N04-P	8.29	5.29	3	1/2"	3.97	

1. Flow rates indicated are at ambient temperature of 68°F at atmospheric pressure.
2. All dryers come with dew point indicator (except IDG1) and fitting for purge air discharge.
3. SMC recommends the use of mist separator (Series AFM) and micro separator (Series AFD) at the inlet of IDG membrane dryer.

Please contact SMC for more detailed information.

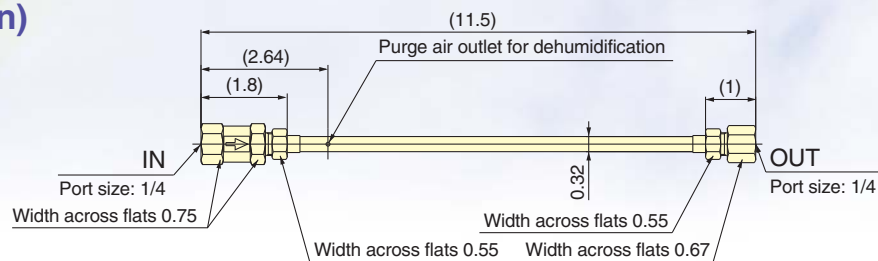
Series IDG

Membrane Air Dryers

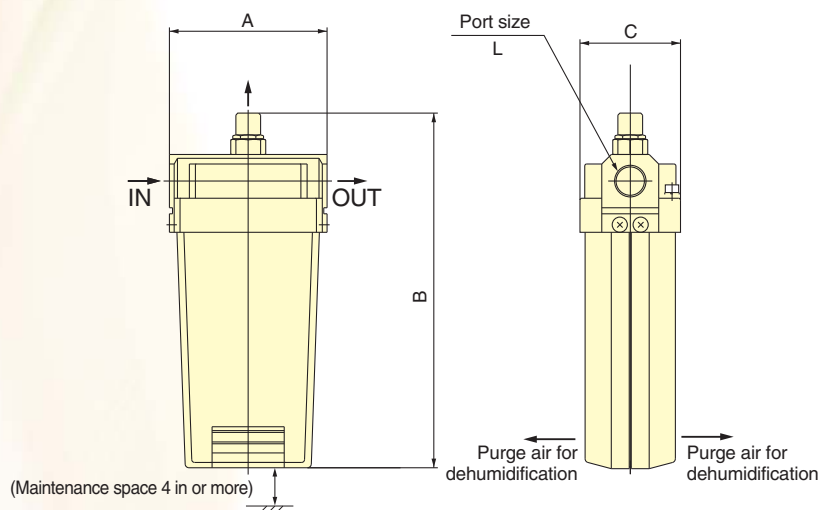
Membrane Air Dryers Series IDG

Dimensions (in)

IDG1



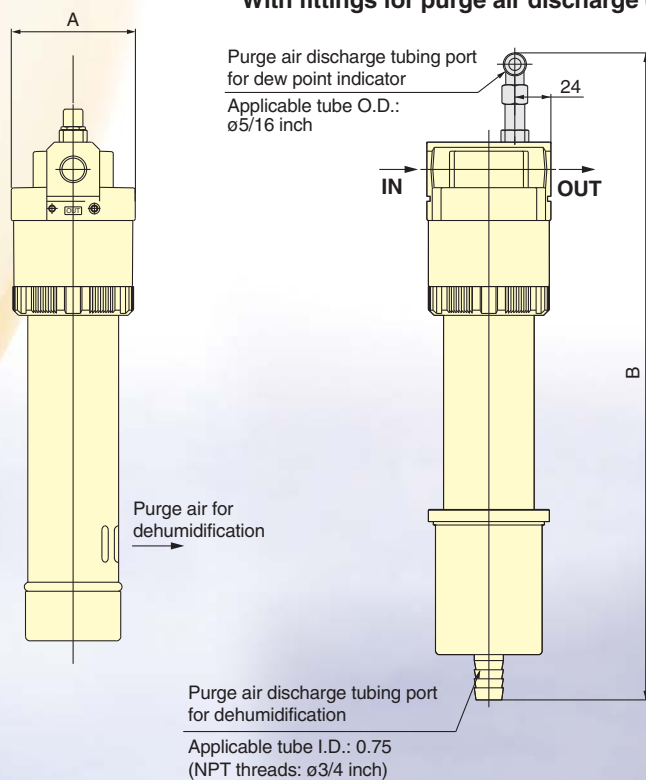
IDG3, 5, 10, 20



Model	Port size L	A	B	C
IDG3, 5	1/4	2.9	5.5	1.6
IDG10	3/8	3.23	7.4	2.1
IDG20		4.45	8.35	2.1

IDG 30, 50, 60, 75, 100

With fittings for purge air discharge (Option: P)



Model	Port size L	A	B
IDG30, 30L	3/8	2.75	14.2
IDG50, 50L			16
IDG60	1/2	3.6	16.9
IDG75, 100			18.4
IDG60L, 60S			21.6
IDG75L, 75S			24.3

Heatless Air Dryers *Series ID*

Features:

- Provides dry air at atmospheric dew point as low as -58°F . Standard atmospheric dew point -22°F
- Compact and light weight without heater and electric control board
- Possible to check outlet dew point with an indicator

Accessories

Model	Bracket	Mist separator	Adsorbent set for standard dew point	Adsorbent set for special low dew point
ID200-N02	6604113	AM150C-N02C	ID-200S	ID-200Z
ID300-N04	6604113	AM350C-N04C	ID-300S	ID-300Z
ID400-N04	660651	AM350C-N04C	ID-400S	ID-400Z
ID600-N06	660651	AM450C-N06C	ID-600S	ID-600Z

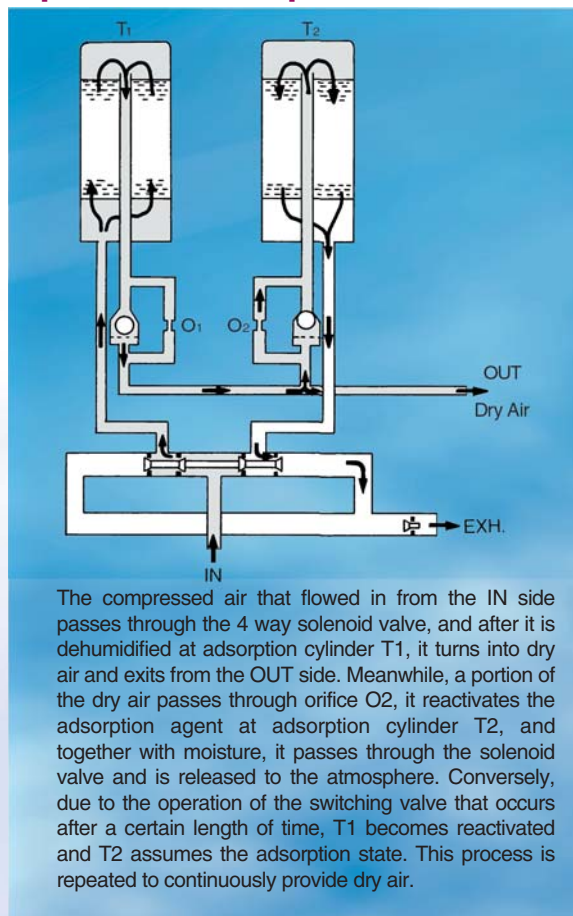


Specifications

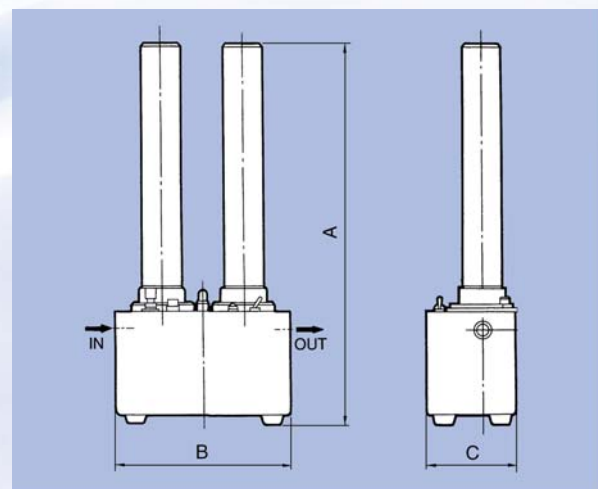
Model	Flow			Port size	Power supply	Dimensions			Weight lbs
	Inlet	Outlet	Recycled Air			A	B	C	
	SCFM	SCFM	SCFM			inch	inch	inch	
ID200-N02	3.53	2.82	0.71	1/4"NPT	110V Single-Phase 60hz	20.5	9.4	4.7	15.4
ID300-N04	6.78	5.47	1.31	1/2"NPT		24.2	9.4	4.7	18.7
ID400-N04	14.65	11.65	3	1/2"NPT		33.5	12.6	6.7	40.8
ID600-N06	34.43	27.54	6.89	3/4"NPT		37.8	12.6	6.7	55.1

Add Z at the end of model no. for -58°F dew point.

Operation Principles



Dimensions



Please contact SMC for more detailed information.

Heatless Desiccant Compressed Air Dryers Pro Dry Series IDW

The ultimate filtration & drying technology

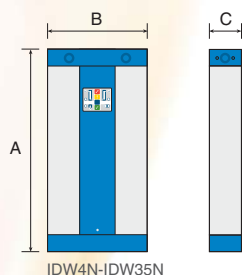


Specifications

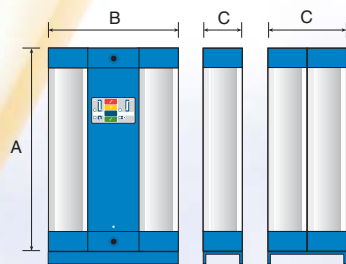
Dryer model	Pipe size	Inlet flow rate	Dryer configuration	Pre-filter Supplied as standard	Dimension inch			Weight lb
		scfm			A	B	C	
IDW4N	3/8"	4	Simplex	✓	17.5	11	3.6	29
IDW6N	3/8"	6	Simplex	✓	20	11	3.6	31
IDW8N	3/8"	8	Simplex	✓	22	11	3.6	33
IDW10N	3/8"	10	Simplex	✓	25	11	3.6	36
IDW15N	3/8"	15	Simplex	✓	32	11	3.6	43
IDW25N	3/8"	25	Simplex	✓	42	11	3.6	53
IDW35N	3/8"	35	Simplex	✓	57.5	11	3.6	68
IDW45N	3/4"	45	Simplex	✗	28.0	20.5	7	117
IDW55N	3/4"	55	Simplex	✗	31.8	20.5	7	130
IDW65N	3/4"	65	Simplex	✗	36.0	20.5	7	141
IDW85N	1"	85	Simplex	✗	43.5	20.5	7	165
IDW105N	1"	105	Simplex	✗	55.8	20.5	7	200
IDW135N	1-1/4"	135	Simplex	✗	63.5	20.5	7	224
IDW175N	1-1/4"	175	Simplex	✗	79.5	20.5	7	271
IDW215N	1-1/2"	215	Duplex	✗	55.8	20.5	13.5	378
IDW275N	1-1/2"	275	Duplex	✗	63.5	20.5	13.5	422
IDW365N	1-1/2"	365	Duplex	✗	79.5	20.5	13.5	510

1. For models IDW45N to IDW365N the dryer will include a drain adaptor kit to allow assembly of the filter to the dryer.

This comprises of 1/4" x 4mm swivel adaptor and tubing.



IDW4N-IDW35N



IDW45N-IDW365N

Specification

Standard pressure dewpoint	-40°F
Optional pressure dewpoint	-100°F
Minimum working pressure	58 psig
Maximum working pressure	232 psig
Power supply	12VDC to 24VDC or 100VAC to 240VAC
Minimum inlet temperature	35°F
Maximum inlet temperature	122°F
Minimum ambient temperature	41°F

Dryer correction factors

Operating pressure (psig)	58	72	87	100	116	130	145	160	174	189	203	218	232
Pressure correction factor (PCF)*	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87	2.0	2.12

Temperature (°F)	68	77	86	95	104	113	122
Temp. correction factor (TCF)	1.07	1.06	1.04	1.00	0.88	0.78	0.55

Dewpoint (°F)	-40	-100
Dewpoint correction factor (DCF)	1	0.7

*Always use the pressure correction factor (PCF) closest to the actual inlet pressure condition
Corrected air flow rate = Operating air flow rate / (PCF x TCF x DCF)

Please contact SMC for more detailed information.

High Capacity Heatless Air Dryer *Series IDA*

Model	Flow	Port size	Dimensions			Weight
			A	B	C	
	SCFM		inch	inch	inch	lbs
IDA50	50	1/2" NPT	52	28	24	160
IDA75	75	3/4" NPT	60	34	24	190
IDA100	100	1" NPT	71	32	28	250
IDA150	150	1 1/2" NPT	74	37	31	375
IDA200	200	1 1/2" NPT	80	36	32	450
IDA280	280	2" NPT	86	41	33	650
IDA380	380	2" NPT	85	45	42	900
IDA630	630	2" NPT	85	57	46	1300
IDA850	850	2 1/2" NPT	87	60	49	1800
IDA1200	1200	3" Flange	99	69	60	2500
IDA1600	1600	3" Flange	101	88	62	4200
IDA2000	2000	4" Flange	120	82	62	5000
IDA2800	2800	4" Flange	118	104	48	6500
IDA3600	3600	6" Flange	120	141	62	9000

The inlet flow figures are at 100psig pressure.

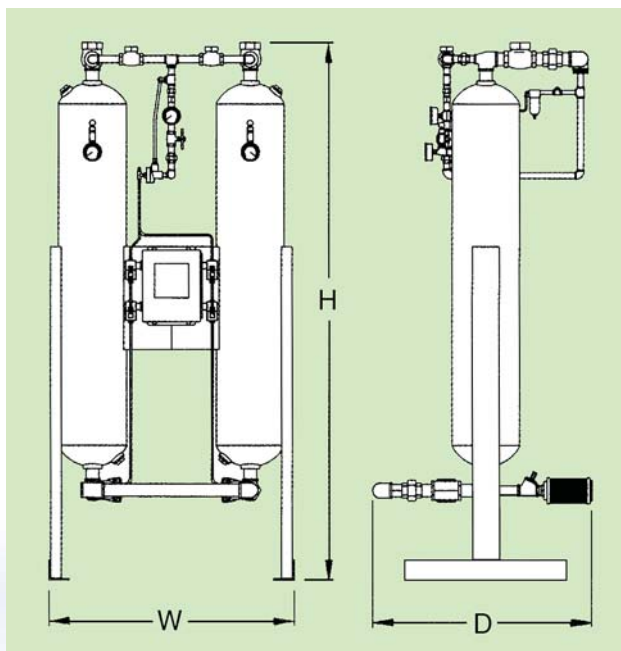
Average purge air consumption is 15% of inlet flow used to regenerate the desiccant.

Features:

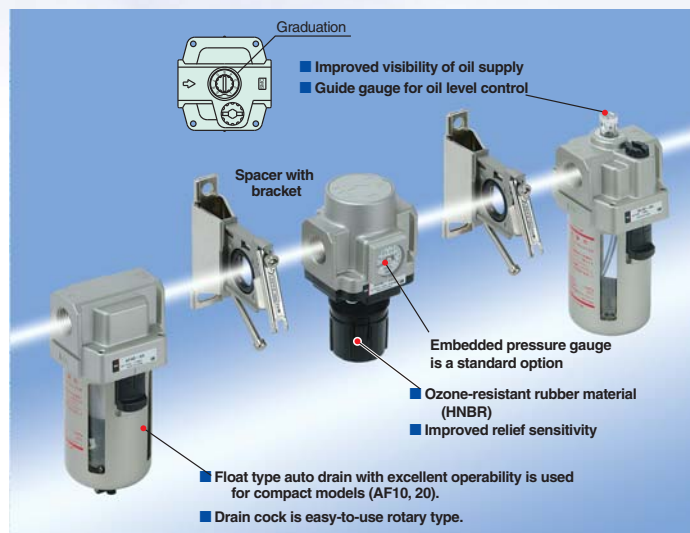
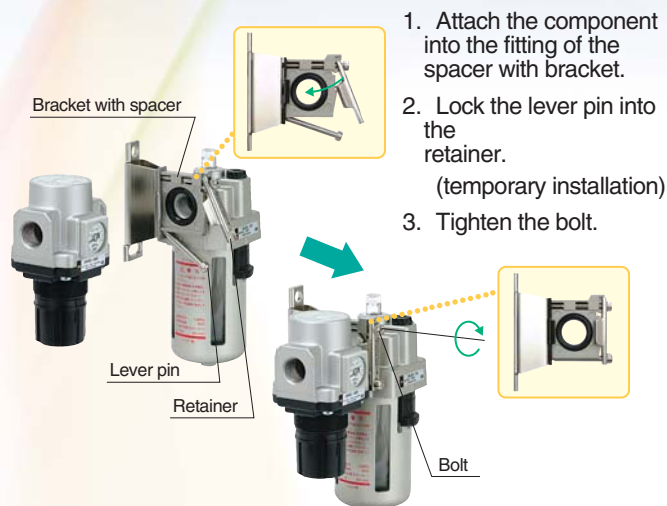
- Removable stainless steel wedge-wire style desiccant retainers
- Diaphragm operated inlet switching and purges exhaust valves
- 5 micron control air filter
- 40°F pressure dew points and lower
- Repressurization valve to allow full tower repressurizing prior to on-line switching – even at reduced purge flow levels
- Up-flow drying and down flow purging ensure desiccant remains stable during tower depressurization and purging
- Liquid filled pressure gauges
- High pressure operation models
- Oil-dust tight EEMAC-12 control panel
- Copper-free construction



Dimensions



EASY TO ASSEMBLE



SERIES AC COMBINATION UNITS

The AC standard FRL combines the most popular air preparation components into a single easy-to-install and maintain unit. The AC is available in a variety of sizes with multiple options to meet any air preparation requirement.

Port Size	Polycarbonate Bowl with Auto Drain and Gauge	Metal Bowl with Auto Drain and Gauge
1/8" NPT	AC20-N01CE-CZ	AC20-N01CE-2Z
1/4" NPT	AC20-N02CE-CZ	AC20-N02CE-2Z
3/8" NPT	AC30-N03DE-Z	AC30-N03DE-8Z
1/2" NPT	AC40-N04DE-Z	AC40-N04DE-8Z
3/4" NPT	AC50-N06DE-Z	AC50-N06DE-8Z
1" NPT	AC60-N10DE-Z	AC60-N10DE-8Z

* Units listed come with embedded gauge. Replace E with G for round gauge



SERIES AF AIR FILTER

The AF air filters can be used independently as in-line or as a component in an FRL combination.

It is designed to remove particulates and moisture from compressed air.

All units listed come with 5 micron filter element.

Port Size	Polycarbonate Bowl with Auto Drain	Metal Bowl with Auto Drain	Replacement Element	Bracket Part Number
1/8" NPT	AF20-N01C-CZ	AF20-N01C-2Z	AF20P-060S	AF20P-050AS
1/4" NPT	AF20-N02C-CZ	AF20-N02C-2Z	AF20P-060S	AF20P-050AS
3/8" NPT	AF30-N03D-Z	AF30-N03D-8Z	AF30P-060S	AF30P-050AS
1/2" NPT	AF40-N04D-Z	AF40-N04D-8Z	AF40P-060S	AF40P-050AS
3/4" NPT	AF50-N06D-Z	AF50-N06D-8Z	AF50P-060S	AF50P-050AS
1" NPT	AF60-N10D-Z	AF60-N10D-8Z	AF60P-060S	AF50P-050AS



SERIES AR REGULATOR

The AR standard regulator allows for accurate in line air pressure regulation.

This series regulator can be used independently or as a component within an FRL combination. It is available in a variety of sizes with options to accommodate almost any situation.

Port Size	Regular with Gauge	Regular. w/ Gauge & Bracket
1/8" NPT	AR20-N01E-Z	AR20-N01BE-Z
1/4" NPT	AR20-N02E-Z	AR20-N02BE-Z
3/8" NPT	AR30-N03E-Z	AR30-N03BE-Z
1/2" NPT	AR40-N04E-Z	AR40-N04BE-Z
3/4" NPT	AR50-N06E-Z	AR50-N06BE-Z
1" NPT	AR60-N10E-Z	AR60-N10BE-Z

* Units listed come with embedded gauge. Replace E with G for round gauge



SERIES AL LUBRICATOR

The Series AL Air Lubricator can be used independently or as an in line component in an FRL combination.

It is designed to provide accurate lubrication of down stream equipment. The oil drop rate can be adjusted depending on the equipment requirements. In addition, the AL30-60 series can be refilled under pressure.

Port Size	Lubricator with Polycarbonate Bowl	Lubricator with Metal Bowl	Bracket Number
1/8" NPT	AL20-N01-Z	AL20-N01-2Z	AF20P-050AS
1/4" NPT	AL20-N02-Z	AL20-N02-2Z	AF20P-050AS
3/8" NPT	AL30-N03-Z	AL30-N03-8Z	AF30P-050AS
1/2" NPT	AL40-N04-Z	AL40-N04-8Z	AF40P-050AS
3/4" NPT	AL50-N06-Z	AL50-N06-8Z	AF50P-050AS
1" NPT	AL60-N10-Z	AL60-N10-8Z	AF50P-050AS



SERIES AFM COALESCING FILTER

The AFM mist separator is able to further clean compressed air with an oil mist removal rate of 99.9% and a filtration of 0.3 micron. The AFM can be installed independently or as a component with an FRL combination.

Port Size	Coalescing Filter with Polycarbonate Bowl	Coalescing Filter with Metal Bowl	Replacement Element
1/8" NPT	AFM20-N01C-Z	AFM20-N01C-2Z	AFM20P-060AS
1/4" NPT	AFM20-N02C-Z	AFM20-N02C-2Z	AFM20P-060AS
3/8" NPT	AFM30-N03D-Z	AFM30-N03D-8Z	AFM30P-060AS
1/2" NPT	AFM40-N04D-Z	AFM40-N04D-8Z	AFM40P-060AS



SERIES AW FILTER / REGULATOR

The AW filter/regulator offers the user space saving features by incorporating both a filter and regulator into one compact package. These units can be mounted independently or as a component in a combination unit. All units listed come with 5 micron filter element.

Port Size	Polycarbonate Bowl Filter Regulator with Gauge	Metal Bowl Filter Regulator with Gauge	Replacement Element
1/8" NPT	AW20-N01CE-CZ	AW20-N01CE-2Z	AF20P-060S
1/4" NPT	AW20-N02CE-CZ	AW20-N02CE-2Z	AF20P-060S
3/8" NPT	AW30-N03DE-Z	AW30-N03DE-8Z	AF30P-060S
1/2" NPT	AW40-N04DE-Z	AW40-N04DE-8Z	AF40P-060S
3/4" NPT	AW60-N06DE-Z	AW60-N06DE-8Z	AF50P-060S
1" NPT	AW60-N10DE-Z	AW60-N10DE-8Z	AF60P-060S

* Units listed come with embedded gauge. Replace E with G for round gauge



SERIES IR PRECISION REGULATOR

The IR precision regulator provides precise air regulation with high sensitivity and repeatability. These regulators incorporate a high flow relief port and can be mounted independently or as a component in a combination unit.

IR precision regulators are available in manual or air piloted adjustment types. Units listed have a regulating range of 1.5-100 psi. Consult your SMC representative for units with other regulating ranges and air pilot adjustment.

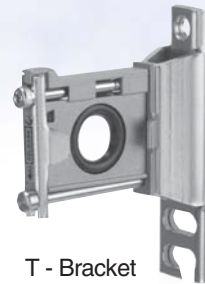
Port Size	Part No. with Gauge	Part No. with Gauge & Bracket
1/8" NPT	IR1020-N01G	IR1020-N01BG
1/4" NPT	IR2020-N02G	IR2020-N02BG
3/8" NPT	IR3020-N03G	IR3020-N03BG
1/2" NPT	IR3020-N04G	IR3020-N04BG

* Units listed come with round gauge



MODULAR FRL CONNECTING BRACKETS

Air Prep Unit - Port Size	Spacer	T-Spacer
1/8" NPT (AC20 Series)	Y200	Y200T
1/4" NPT (AC20 Series)	Y200	Y200T
3/8" NPT (AC30 Series)	Y300	Y300T
1/2" NPT (AC40 Series)	Y400	Y400T
3/4" NPT (AC50 Series)	Y600	Y600T
1" NPT (AC60 Series)	Y600	Y600T



T - Bracket



Spacer

PRESSURE RELIEF 3 PORT VALVE WITH LOCKOUT CAPABILITY

- Conforming to OSHA standard

Air Prep Unit - Port Size	Part Number
1/4" for 20 Series	VHS20-N02-Z
1/4" for 30 Series	VHS30-N02-Z
3/8" for 30 series	VHS30-N03-Z
1/2" for 40 series	VHS40-N04-Z
3/4" for 50/60 series	VHS50-N06-Z
1" for 50/60 series	VHS50-N10-Z

Combination with a modular style FRL



VHS 20/30/40/50



Series NAV Soft Start Valves

Soft Start Valves	Description
NAV2000-N02-3DZ	1/4" NPT, Soft Start Up Valve, 120VAC, Din Connection
NAV2000-N02-5DZ	1/4" NPT, Soft Start Up Valve, 24VDC, Din Connection
NAV3000-N03-3DZ	3/8" NPT, Soft Start Up Valve, 120VAC, Din Connection
NAV3000-N03-5DZ	3/8" NPT, Soft Start Up Valve, 24VDC, Din Connection
NAV4000-N04-3DZ	1/2" NPT, Soft Start Up Valve, 120VAC, Din Connection
NAV4000-N04-5DZ	1/2" NPT, Soft Start Up Valve, 24VDC, Din Connection
NAV5000-N06-3DZ	3/4" NPT, Soft Start Up Valve, 120VAC, Din Connection
NAV5000-N06-5DZ	3/4" NPT, Soft Start Up Valve, 24VDC, Din Connection
NAV5000-N10-3DZ	1" NPT, Soft Start Up Valve, 120VAC, Din Connection
NAV5000-N10-5DZ	1" NPT, Soft Start Up Valve, 24VDC, Din Connection

NAV Soft Start Up Valve

A Start-up valve that gradually increases supply pressure during start up and rapidly exhausts system air when the supply air is shut off.



Series AVL Soft Start Valves with Lock Out

Soft Start Valves with Lock Out	Description
AVL2000-N02-3DZ	1/4" NPT, Soft Start Up Valve W/ Lock Out, 120VAC, Din Connection
AVL2000-N02-5DZ	1/4" NPT, Soft Start Up Valve W/ Lock Out, 24VDC, Din Connection
AVL3000-N03-3DZ	3/8" NPT, Soft Start Up Valve W/ Lock Out, 120VAC, Din Connection
AVL3000-N03-5DZ	3/8" NPT, Soft Start Up Valve W/ Lock Out, 24VDC, Din Connection
AVL4000-N04-3DZ	1/2" NPT, Soft Start Up Valve W/ Lock Out, 120VAC, Din Connection
AVL4000-N04-5DZ	1/2" NPT, Soft Start Up Valve W/ Lock Out, 24VDC, Din Connection
AVL5000-N06-3DZ	3/4" NPT, Soft Start Up Valve W/ Lock Out, 120VAC, Din Connection
AVL5000-N06-5DZ	3/4" NPT, Soft Start Up Valve W/ Lock Out, 24VDC, Din Connection
AVL5000-N10-3DZ	1" NPT, Soft Start Up Valve W/ Lock Out, 120VAC, Din Connection
AVL5000-N10-5DZ	1" NPT, Soft Start Up Valve W/ Lock Out, 24VDC, Din Connection

AVL Soft Start Up Valve with Lock Out

Soft start valve with O.S.H.A. Compliant lock out. Gradual increase of supply pressure and rapid exhaust of system air when the supply is shut off.



Please contact SMC for more detailed information.

Large Tube Insertion Depth

Space to compensate for tubing that is not cut square, eliminating associated leakage

Easy Fitting and Adjustment

The o-ring and barbed design allows the fitting to rotate into the desired position upon installation

Pre-Applied Sealant

Eliminate the labor and the contamination that may occur when applying sealant

Special Tube Seal Design

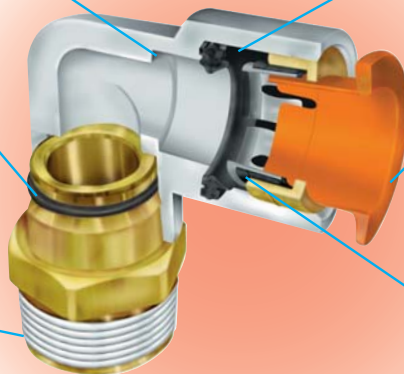
Designed to insure positive seal against tubing in rugged applications and easy release vs. a standard o-ring

Large Release Button

The release button ensures easy release of tubing. When depressed the sleeve engages the chuck to release its grip, allowing the tube seal to separate

Stainless Steel Chuck

Allows smooth insertion in one direction and creates excellent gripping the other direction



Male connector Male elbow Bulkhead union Plug Plug-in reducer Branch tee Union "Y" Male run tee

KQ2

H

01

-

35

S

Compact slide table

Prefix	Description
H	Male connector
K	Straight union
L	Different dia. straight union
L	45° Male elbow
L	Male elbow
L	Union elbow
L	Plug-in elbow
L	Reducer elbow
C	Tube cap
C	Color cap
D	Delta
D	Delta union
E	Bulkhead union
E	Bulkhead female union
F	Female connector
N	Nipple
N	Different dia. nipple
N	Adaptor
P	Plug
R	Plug-in reducer
S	Hex. socket head male connector
T	Branch tee
U	Union "Y"
U	Branch "Y"
W	Extended male elbow
W	Extended plug-in elbow
Y	Male run tee

Tube O.D.

Inch	
01	1/8"
03	5/32"
05	3/16"
07	1/4"
09	5/16"
11	3/8"
13	1/2"

Sealant

Nil	Without sealant
S	With sealant (male thread only, except M5, M6 and 10-32)

Connections

Type	Symbol	Description	Prefix
Tube unions	00	Tubing of equal O.D. diameter	H, L, T, U, E
Plug-in	99	Fitting plug-in to fitting of equal O.D.	L, U
Reducer plug-in	03 05 07 09 11	5/32" 3/16" 1/4" 5/16" 3/8"	L, R
Tube (rod)	13 06 08 10 12 16	1/2" 6mm 8mm 10mm 12mm 16mm	H, T, U, X, N
Threaded pipe	32 33 34 35 36 37	10-32 UNF Thread 1/16" NPT 1/8" NPT 1/4" NPT 3/8" NPT 1/2" NPT	H, L, W, T, Y, U, E

Please contact SMC for more detailed information.



SMC Offers the Highest Dimensional Accuracy

- Continuous laser inspection of outside diameter during production
- Continuous monitoring of wall thickness

Polyurethane Tubing--*Series TIUB/TU*

Polyurethane tubing is fast becoming the ideal choice for pneumatic applications. It combines the elasticity of rubber with the chemical resistance normally reserved for plastics. Polyurethane can be put into two classifications, ester based and ether based. SMC offers both.

Ether-based polyurethane is the preferred tubing material for general pneumatic applications due to its immunity to hydrolysis and its higher resistance to fungus and microorganism attacks. The ester-based polyurethane is a stronger compound but tends to hydrolyze with moisture. This hydrolysis process will degrade the material over time.

SMC's primary line of Polyurethane tubing is ether based, made from the highest quality compound available to ensure the longest tubing life.

Properties

- Cut resistant
- Excellent memory
- Wide temperature range
- Low compression set
- Low gas permeability
- Kink resistant
- Tear resistant
- Abrasion resistant
- Extreme flexibility
- Good chemical resistance

TIUB (Inch)

TIUB 05 BU — 33

Size (Inch)		Length per roll	
01	1/8"	20	66ft
05	3/16"	33	100ft
07	1/4"	153	500ft
11	3/8"	305	1000ft
13	1/2"		

Color indication

B	Black	
BU	Blue	
C	Clear	
G	Green	
R	Red	
W	White	
Y	Yellow	
YR	Orange	

Nylon Tubing--*Series TIA/T*

Nylon was developed more than half a century ago and is considered to be the first man-made thermoplastic available. Deemed a rugged engineering plastic, its properties make it an ideal choice for a variety of applications. Nylon does not depend on moisture for flexibility and will not become brittle or swell because of water. Therefore it has excellent low moisture absorption and dimensional stability characteristics.

Nylon tubing for pneumatic applications is primarily made from Nylon 11, and more recently Nylon 12. Nylon 12 has virtually the same physical properties and performance as Nylon 11.

Properties

- Dimensional stability
- Low moisture absorption
- Elastic memory
- High impact resistance
- High thermal resistance
- Light weight
- Wide temperature range
- High abrasion resistance
- Good flexibility
- Broad chemical resistance

TIA (Inch)

TIA 07 B — 33

Tube diameter		Length per roll	
01	1/8"	33	100ft
05	3/16"	153	500ft
07	1/4"	305	1000ft
11	3/8"		
13	1/2"		

Color indication

B	Black	
BU	Blue	
C	Clear	
G	Green	
R	Red	
W	White	
Y	Yellow	

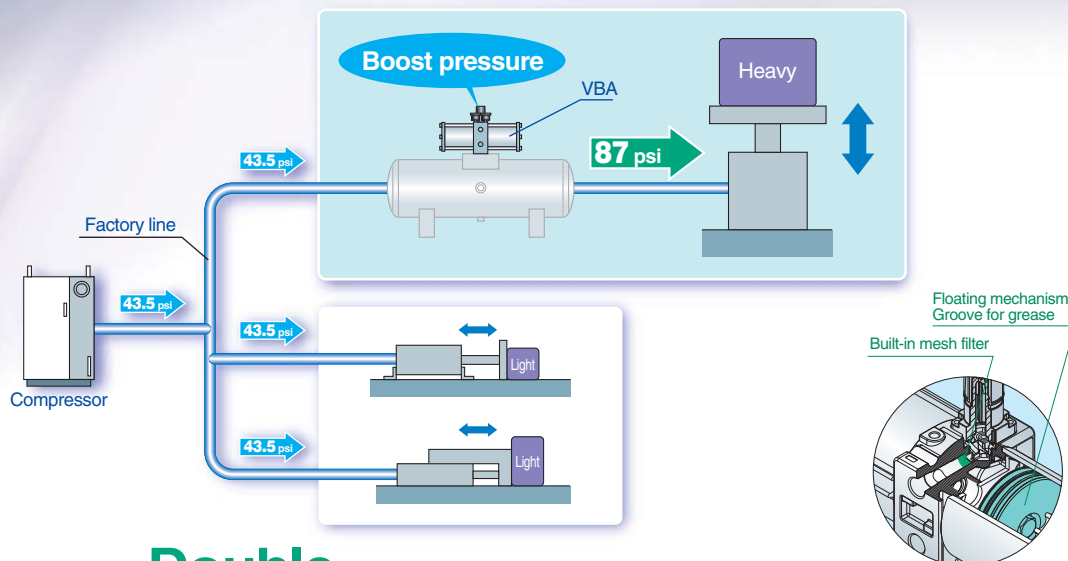
Please contact SMC for more detailed information.

Booster Regulator *Series VBA*

Increase factory air pressure by up to twice as much! No need for an electrical supply!

- Using air from a factory supply line increases pressure by up to twice as much.

Save energy (compressor electricity and air use) by reducing air pressure. Booster regulators can support lower-level supply lines individually.



- **Improved service life: Double** that of conventional model
 - Floating mechanism for piston (PAT. PEND)
 - Groove for grease
- **(Optional) Noise reduction: Reduced by 13 dB(A)** compared with the conventional model
 - Metal noise reduced by a damper on the impact part of the switch valve
 - Exhaust noise reduced by a high- noise reduction silencer
- **Improved reliability: Built-in mesh filter in the IN port**
 - Prevents malfunction due to contamination from solid foreign matter.



Part Numbers/Standard Specifications

Model	VBA10A-T02GN-Z	VBA20A-T03GN-Z	VBA40A-T04GN-Z	VBA22A-T03GN-Z	VBA42A-T04GN-Z	VBA1111-T02GN	VBA43A-T04GN-Z
Fluid	Compressed air						
Pressure increase ratio	Twice					Twice to 4 times	Twice
Pressure adjustment mechanism	Handle-operated with relief mechanism ^{Note 1)}			Air-operated ^{Note 2)}		Handle-operated with relief mechanism ^{Note 1)}	
Max. flow rate ^{Note 3)} (SCFM)	8	35	67	35	67	2.1	56.5
Set pressure range (psi)	29 to 290	29 to 145		14.5 to 145		29 to 290	29 to 232
Supply pressure range (psi)	15 to 145						
Proof pressure (psi)	435	218		218		435	348
Port size (IN/OUT/EXH: 3 locations) (NPTF)	1/4	3/8	1/2	3/8	1/2	1/4	1/2
Pressure gauge port size (IN/OUT: 2 locations) (NPTF)	1/8	1/8	1/8	1/8	1/8	1/16	1/8
Ambient and fluid temperature (°F)	35.6 to 122 (No freezing)						
Installation	Horizontal						
Lubrication	Grease (Non-lube)						
Mass (LB)	1.9	8.6	19	8.6	19	2.2	19

Note 1) If the OUT pressure is higher than the set pressure by the handle, excessive pressure is exhausted from the back of the handle.

Note 2) Please consult with SMC for details on the air-operated type (VBA22A-03, VBA42A-04) and 232 psi compatible type (VBA43A-04).

Note 3) Flow rate at IN= OUT= 72.5 psi. The pressure varies depending on the operating conditions.

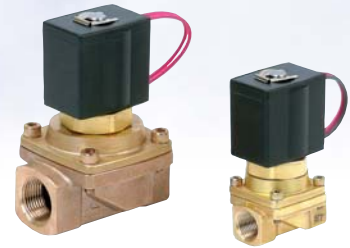
Please contact SMC for more detailed information.

2 port Solenoid Valves Series VX

Compatible with Various Fluids

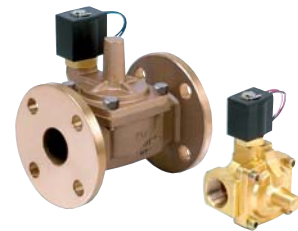


The new VX series, with its improved construction, will replace our previous VX range.



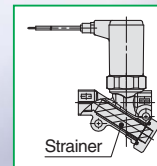
Zero Differential Pressure Type 2 Port Solenoid Valve Series VXZ

Part Number	Orifice	Configuration	PORT size NPTF	Voltage	Electrical entry	Body	Seal
VXZ2230-02T-3CR1	10 mm	Normally Closed	1/4"	110V AC	Conduit	BRASS	NBR
VXZ2230-02T-5C1	10 mm	Normally Closed	1/4"	24V DC			
VXZ2230-03T-3CR1	10 mm	Normally Closed	3/8"	110V AC			
VXZ2230-03T-5C1	10 mm	Normally Closed	3/8"	24V DC			
VXZ2240-04T-3CR1	15 mm	Normally Closed	1/2"	110V AC			
VXZ2240-04T-5C1	15 mm	Normally Closed	1/2"	24V DC			
VXZ2350-06T-3CR1	20 mm	Normally Closed	3/4"	110V AC			
VXZ2350-06T-5C1	20 mm	Normally Closed	3/4"	24V DC			
VXZ2360-10T-3CR1	25 mm	Normally Closed	1"	110V AC			
VXZ2360-10T-5C1	25 mm	Normally Closed	1"	24V DC			



Pilot Operated 2 port Solenoid Valve Series VXP

Part Number	Orifice	Configuration	PORT size NPTF	Voltage	Electrical entry	Body	Seal
VXP2270-12T-3C	35 mm	Normally Closed	1 1/4"	110V AC	Conduit	BRASS	NBR
VXP2270-12T-5C	35 mm	Normally Closed	1 1/4"	24V DC			
VXP2280-14T-3C	40 mm	Normally Closed	1 1/2"	110V AC			
VXP2280-14T-5C	40 mm	Normally Closed	1 1/2"	24V DC			
VXP2290-20T-3C	50 mm	Normally Closed	2"	110V AC			
VXP2290-20T-5C	50 mm	Normally Closed	2"	24V DC			



2 Port Solenoid Valve with built-in strainer Series VXX

Part Number	Orifice	Configuration	PORT size NPTF	Voltage	Electrical entry	Body	Seal
VXK2120-02T-3C1	3 mm	Normally Closed	1/4"	110V AC	Conduit	BRASS	NBR
VXK2120-02T-5C1	3 mm	Normally Closed	1/4"	24V DC			
VXK2230-02T-5C1	4.5 mm	Normally Closed	1/4"	110V AC			
VXK2230-02T-3C1	4.5 mm	Normally Closed	1/4"	24V DC			
VXK2340-03T-5C1	6 mm	Normally Closed	3/8"	110V AC			
VXK2340-03T-3C1	6 mm	Normally Closed	3/8"	24V DC			

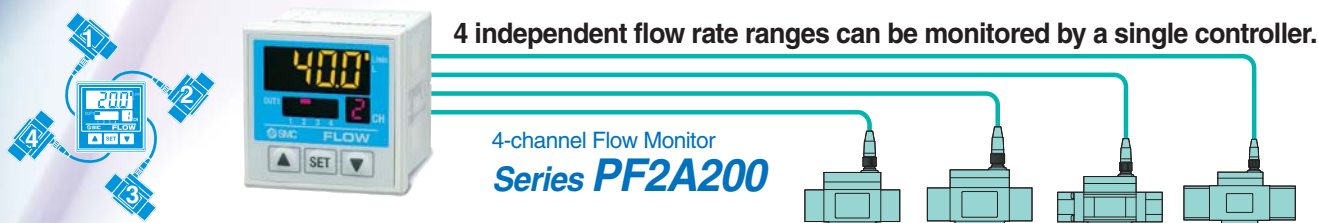
Please contact SMC for more detailed information.

Flow Switch for Air *Series PF2A*



1. Flow rate setting and monitoring are possible with the digital display.
2. Two types are available: Integrated and Remote type.
3. Three types of output: Switch, accumulated pulse, and analog outputs.
4. Switching from real-time flow rate to accumulated flow is possible.
5. Two independent flow rate settings are possible.
6. Water resistant construction conforming to IP65

A single controller can monitor the flow rate of 4 different sensors.



				
Flow rate measurement range scfm	Integrated type	Remote type		
0.035 to 0.35	PF2A710	Sensor unit	Display unit	Display unit (4ch)
0.18 to 1.8	PF2A750	PF2A510	PF2A30□	PF2A20□
0.35 to 3.5	PF2A711	PF2A550		
0.71 to 7.1	PF2A721	PF2A511	PF2A31□	
1.8 to 18	PF2A751	PF2A521		
5.3 to 106	PF2A703H	PF2A551		
10 to 212	PF2A706H	—	—	—
21 to 424	PF2A712H			

For more information on the PF2A series, please contact SMC or reference SMC catalog ES100-54A

PSE200-(M)-X101 Multi-Channel Controller for Detecting Differential Pressure

Application: Set and display differential pressure (*1) detected by 2 pressure sensors

This sensor controller lets you know when a filter element needs to be replaced because it is clogged. This sensor controller can detect the inlet and outlet pressure of an air filter with 2 pressure sensors independently, and display the differential pressure

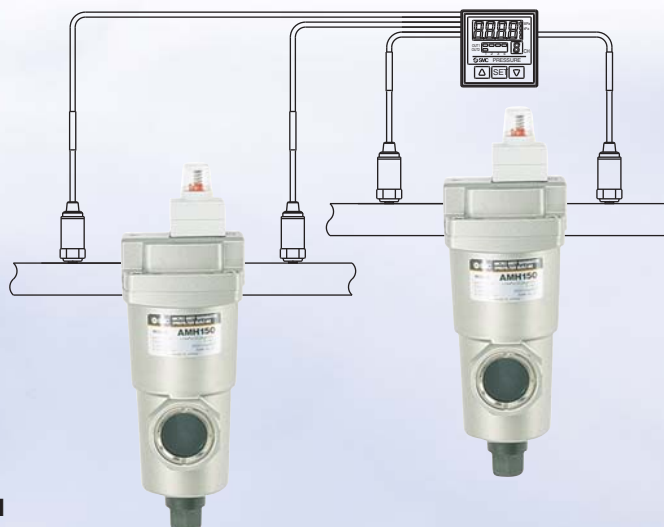
Feature 1: Display differential pressure detected by 2 pressure sensors.

Feature 2: A single controller can monitor 2 differential pressures across 2 different filters.

Feature 3: CE Marked

*1) It is possible to set and display differential pressures detected by between CH1 and CH2, and also between CH3 and CH4. (CH: Channel)

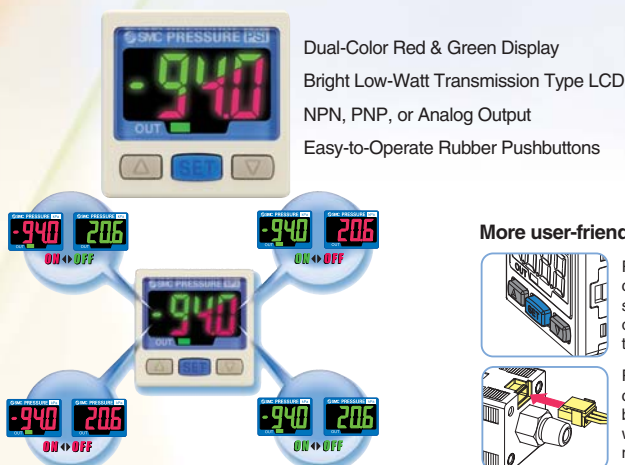
Change filter element when the differential pressure is 6PSI or every 12 months, whichever occurs first



Please contact SMC for more detailed information.

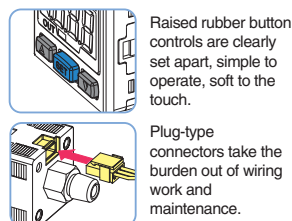
Digital Pressure & Vacuum Switches Series ISE30A/ZSE30A

Many advanced functions, including adjustable response, copy up to 10 units at a time simultaneously, automatic preset, and more.



- Dual-Color Red & Green Display
- Bright Low-Watt Transmission Type LCD
- NPN, PNP, or Analog Output
- Easy-to-Operate Rubber Pushbuttons

More user-friendly controls

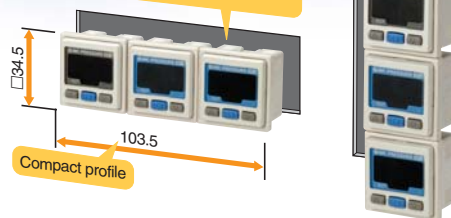


Raised rubber button controls are clearly set apart, simple to operate, soft to the touch.

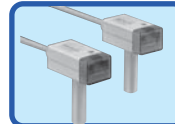
Plug-type connectors take the burden out of wiring work and maintenance.

Compact side-by-side mountable

Just one panel opening is required for stackable displays, which can be mounted either horizontally or vertically.



Non-display Model



Remote Sensor Model



For vacuum and low pressure
ZSE30A Series

For positive pressure
ISE30A Series

Rated pressure range
ISE30A -14.5 to 145 psi

For positive pressure

For vacuum/
compound pressure

Rated pressure range
ZSE30A 0 to -14.65 psi
ZSE30AF -14.5 to 14.5 psi

ISE30A - 01 - N - M

ZSE30A - 01 - N - M

Piping

01	R1/8 (M5 female threaded)	
N01	NPT1/8 (M5 female threaded)	
C4H	One-touch fitting ø4 mm, ø5/32 inch	
C6H	One-touch fitting ø6 mm	
N7H	One-touch fitting ø1/4 inch	
C4L	One-touch fitting ø4 mm, ø5/32 inch	
C6L	One-touch fitting ø6 mm	
N7L	One-touch fitting ø1/4 inch	

* Made to Order

Display unit

Nil	With unit display switching function ^{Note 1)}
M	Fixed SI unit ^{Note 2)}
P*	With unit display switching function (Initial value PSI)

* Made to Order

Note 1) Under the New Measurement Law, sales of switches with the unit switching function have not been allowed for use in Japan.

Note 2) Fixed unit: kPa, MPa

Option 1

Nil	Without lead wire	
L	Lead wire with connector (Lead wire length 2 m) ^{Note)}	
G	Lead wire with connector (Lead wire length 2 m) ^{Note)} With connector cover	

Note) For output types N and P, the number of core of lead wires will be 3, and for other types, it will be 4.

Output

N	NPN open collector 1 output
P	PNP open collector 1 output
A	NPN open collector 2 outputs
B	PNP open collector 2 outputs
C*	NPN open collector 1 output + Analog voltage output
D*	NPN open collector 1 output + Analog current output
E*	PNP open collector 1 output + Analog voltage output
F*	PNP open collector 1 output + Analog current output

* Made to Order

Option 2

Nil	None	
A1	Bracket A	
A2	Bracket B	
B	Panel mount adapter	
D	Panel mount adapter + Front protection cover	

Please contact SMC for more detailed information.

Energy Saving VMG Blow Gun *Series VMG*

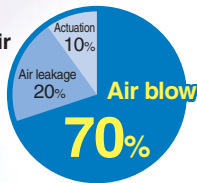


Piping direction	
Bottom	
Top	
Piping type	
Rc, NPT, G	1/4, 3/8
With S coupler plug	
Body color	
White	
Dark blue	

Nozzles	
Low-noise nozzle Mono-porous nozzle (ø2) 90 to 100 dB ø1 x 4 low noise nozzle 80 dB or less Note) Supply pressure: 72.5 MPa Measured at a 45 degree angle according to JIS B 8379	Male thread nozzle  * Powerful, and economical.
 * Achieving lower-noise by dividing the air blow slit.	High-efficiency nozzle  * Making use of Bernoulli effect and achieving high-efficiency.
	Copper extension nozzle  * Secures large power even at a greater distance from a workpiece.

“Why not use wasted air?”

Example of air consumption inside the factory



The power consumption for air (compressor) consumed in the factory is accounting for 20%. An estimated 70% of total air consumption is used for air blowing. Why not review your air consumption?

- First, check your blow gun. Most blow guns in use have an effective area of about 6 mm².

But the SMC model has an **effective area** of **30 mm²**.

If a blow gun with a larger effective area is used.



- Furthermore, energy can be saved using a comprehensive air-blow system.

Air leakage measures Improvement of pressure loss High-efficiency etc.



VMG 1 1 W - 03 - 01

Blow gun
Standard type

Series

1 Resin body lever type

Piping entry

1	Bottom
2	Top

Body color

W	White
BU	Dark blue

Piping connection type

Nil	Rc
N	NPT
F	G

Nozzle

	Type	Nozzle model	Nozzle size
Nil		Without nozzle	
01	Male thread nozzle	KN-R02-100	ø1
02		KN-R02-150	ø1.5
03		KN-R02-200	ø2
04		KN-R02-250	ø2.5
11	High efficiency nozzle	KNH-R02-100	ø1
12		KNH-R02-150	ø1.5
13		KNH-R02-200	ø2
21	Low noise nozzle with male thread	KNS-R02-075-4	ø0.75 x 4
22		KNS-R02-090-8	ø0.9 x 8
23		KNS-R02-100-4	ø1 x 4
24		KNS-R02-110-8	ø1.1 x 8
31	Copper ^{Note)} extension nozzle	Length 300 mm	KNL3-06-150 ø1.5
32		Length 300 mm	KNL3-06-200 ø2
33		Length 600 mm	KNL6-06-150 ø1.5
34		Length 600 mm	KNL6-06-200 ø2

Note) One piece of H06-02 self-align fitting is attached.

When a copper extension nozzle is ordered separately, a self-align fitting will also be required for connection. Order one with the above part number in addition to the nozzle.

Connection size

	Piping connection system	Size and part no.	
02	Screw-in type	Port size	1/4
03		Port size	3/8
11	With S coupler plug ^{Note)}	Plug part no.	KK4P-02MS

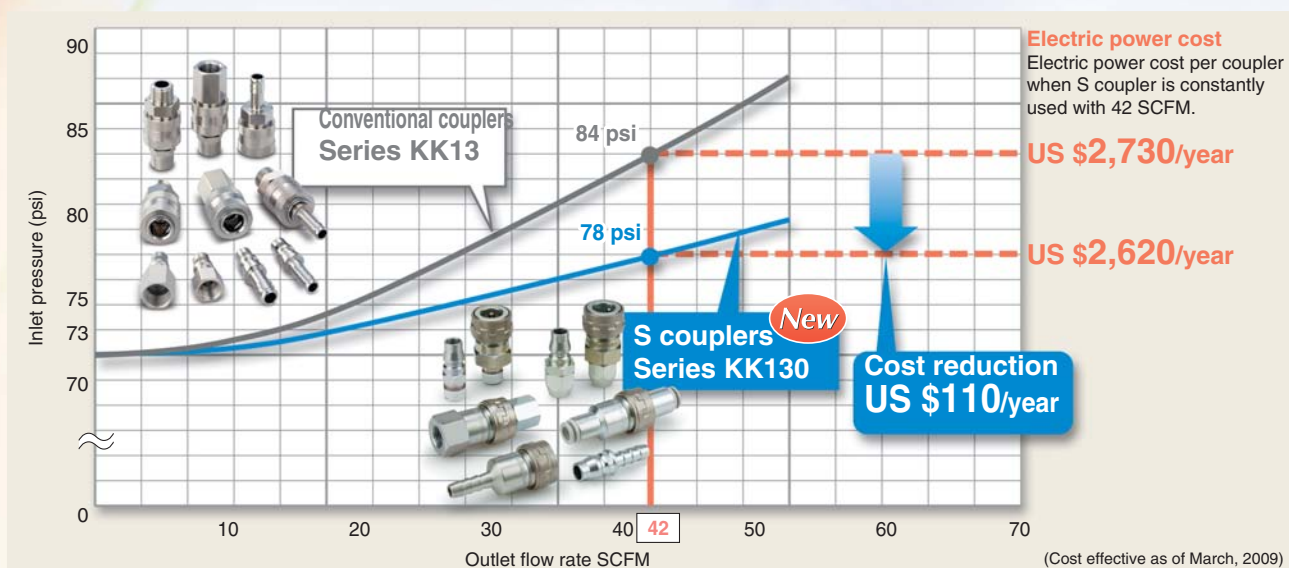
Note) In the case of a type with an S coupler plug, specify no symbol (Rc) for the piping connection type. The size is Rc 1/4.

Please contact SMC for more detailed information.

Energy Saving S Couplers Series KK130

Pressure loss is smaller than the conventional product (Series KK13), even if inlet pressure is reduced. Equivalent outlet pressure and flow rate can be achieved when used for air blow. It is possible to reduce cost with lower air and energy consumption of the compressors.

Inlet pressure and compressor electric power cost against operating flow rate (per coupler)



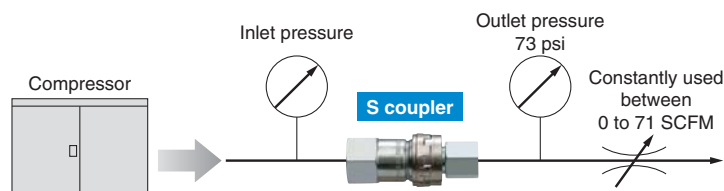
[Calculation conditions]

Operating pressure at the outlet: 73 psi

Compressor efficiency: 0.7

Electric power cost: US \$0.15/kWh

Annual operating time: 2500 hours



Series KK130 Variations



Plug (P)

Male thread type



Port size	Model
NPT1/8	KK130P-N01MS
NPT1/4	-N02MS
NPT3/8	-N03MS
NPT1/2	-N04MS

Female thread type



Port size	Model
NPT1/8	KK130P-N01F
NPT1/4	-N02F
NPT3/8	-N03F
NPT1/2	-N04F

Barb fitting type (for rubber hose)



Applicable hose I.D.	Model
1/4"	KK130P-07B
5/16"	-09B
3/8"	-11B
1/2"	-13B

One-touch fitting type



Inch size	Applicable tube O.D.	Model
	1/4"	KK130P-07H
	5/16"	-09H
	3/8"	-11H
	1/2"	-13H



Socket (S)

Male thread type



Port size	Model*
NPT1/8	KK130S-N01MS
NPT1/4	-N02MS
NPT3/8	-N03MS
NPT1/2	-N04MS

Female thread type



Port size	Model*
NPT1/8	KK130S-N01F
NPT1/4	-N02F
NPT3/8	-N03F
NPT1/2	-N04F

Barb fitting type (for rubber hose)



Applicable hose I.D.	Model*
1/4"	KK130S-07B
5/16"	-09B
3/8"	-11B
1/2"	-13B

One-touch fitting type

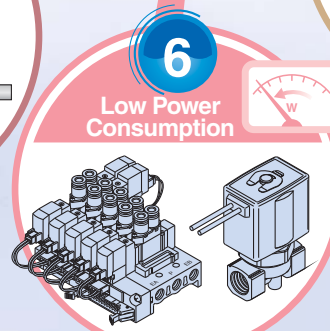
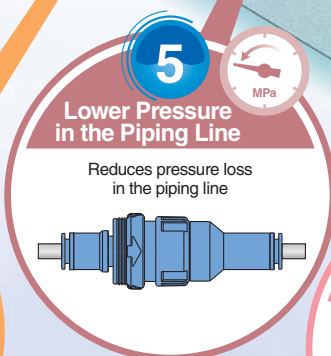
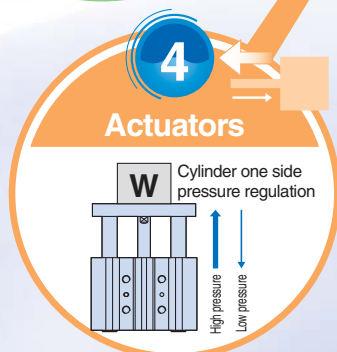
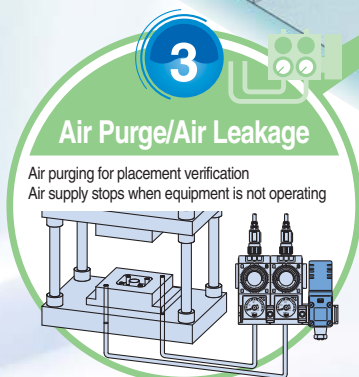
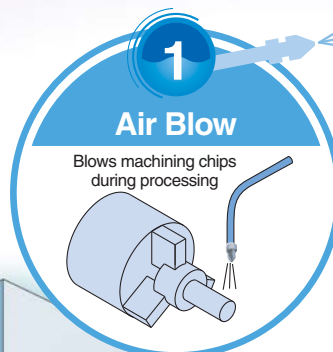
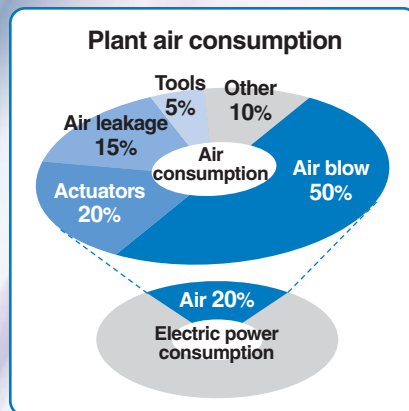


Inch size	Applicable tube O.D.	Model*
	1/4"	KK130S-07H
	5/16"	-09H
	3/8"	-11H
	1/2"	-13H

Compressed air is the 4th utility.
Let SMC show you
how to reduce
energy costs

Plant Air Energy Saving Proposal for a **50%** reduction

—Contributes to **CO₂** emissions reduction—



Plant Air Energy Saving

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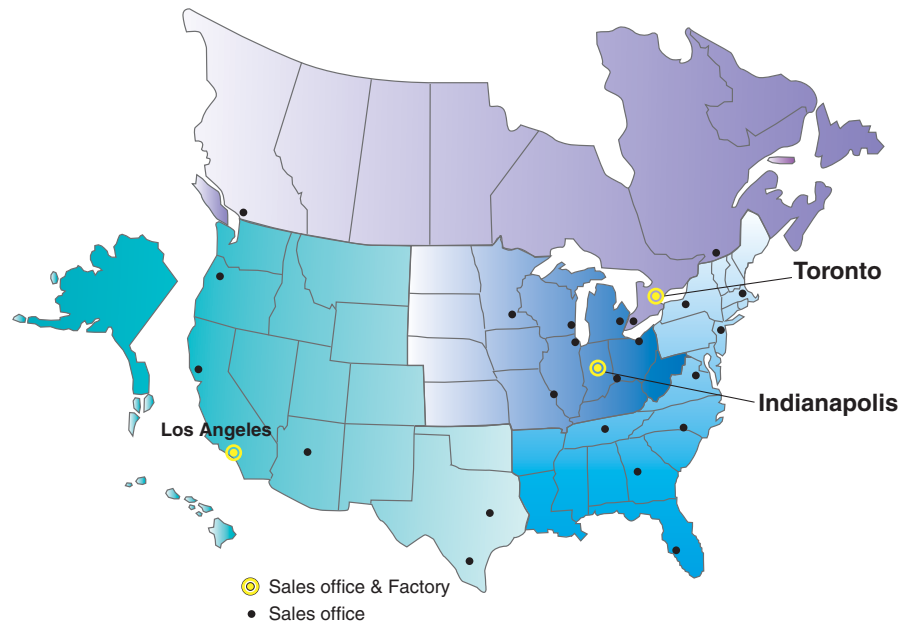
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